



SFUND RECORDS CTR
1110-00356

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SFUND RECORDS CTR
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MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong *RF*
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof *Sub for D.L.*
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105091

DATE: May 23, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

| | |
|-------------------|--------------------------|
| SITE: | Omega Chem OU-2 |
| SITE ACCOUNT NO.: | 09 BC LA02 |
| CERCLIS ID NO.: | CAD042245001 |
| CASE NO.: | 30205 |
| SDG NO.: | Y0E21 |
| LABORATORY: | A4 Scientific, Inc. (A4) |
| ANALYSIS: | Volatiles |
| SAMPLES: | 9 Water Samples |
| COLLECTION DATE: | February 25 and 26, 2002 |
| REVIEWER: | Santiago Lee, ESAT/LDC |

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Ray Flores, CLP PO USEPA Region 6
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: ☐ FYI ☒ Attention ☐ Action

SAMPLING ISSUES: ☒ Yes ☐ No

Data Validation Report

Case No.: 30205 SDG No.: Y0E21
Site: Omega Chem OU-2
Laboratory: A4 Scientific, Inc. (A4)
Reviewer: Santiago Lee, ESAT/LDC
Date: May 23 , 2002

I. Case Summary

SAMPLE INFORMATION:

Samples: Y0E21 through Y0E27, Y0EB6, and Y0EB7
Concentration and Matrix: Low Level Water
Analysis: Volatiles
SOW: OLC03.2
Collection Date: February 25 and 26, 2002
Sample Receipt Date: February 27, 2002
Extraction Date: Not Applicable
Analysis Date: March 8, 9, 13, and 15, 2002

FIELD QC:

Trip Blanks (TB): Y0E25 and Y0EB7
Field Blanks (FB): Not Provided
Equipment Blanks (EB): Not Provided
Background Samples (BG): Not Provided
Field Duplicates (D1): Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBK93: Y0E25 and Y0E26
VBK94: Y0E26DL, Y0E23DL, Y0E22DL, and Y0E21DL
VBK95: Y0E21, Y0E23, Y0E24, Y0E27, Y0EB6, and Y0EB7
VBK99: Y0E22, Y0E24DL, and Y0E27DL
VBK02: VHBLK01

TABLES:

1A: Analytical Results with Qualifications
1B: Data Qualifier Definitions for Organic Data Review
2: Calibration Summary

DL - Dilution

CLP PO ACTION:

None.

CLP PO ATTENTION:

- 1) Detected results for methylene chloride, chloroform, and tetrachloroethene (PCE) in some samples are qualified as nondetected and estimated (U,J) due to contamination in the method blanks and trip blanks.
- 2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to holding time problems.
- 3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.
- 4) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) recoveries outside QC limits.
- 5) Detected result for PCE in sample Y0E21 is qualified as estimated (J) due to internal standard area problem.

SAMPLING ISSUES:

Detected results for chloroform in samples Y0EB6 and Y0E27 are qualified as nondetected and estimated (U,J) due to contamination in trip blank Y0EB7.

ADDITIONAL COMMENTS:

Matrix spike/matrix spike duplicate (MS/MSD) pair was not analyzed because the Organic Traffic Report & Chain of Custody Record indicates that VOA MS/MSD is not required.

Tentatively identified compounds (TICs) detected in the samples are reported on the Form 1LCFs. Other than laboratory artifacts/contaminants (retention times = 9.0 and 14.1 minutes), TICs were detected in samples Y0E23, Y0E26, Y0EB6 and Y0EB7 (see attached Form 1LCFs).

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*,
- USEPA Contract Laboratory Program Statement of Work for Low Concentration Organics Analysis, OLC03.2, December 2000; and
- USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, June 2001.

II. Validation Summary

| | Acceptable/Comment | |
|--|--------------------|------------|
| HOLDING TIMES | NO | C |
| GC/MS TUNE/GC PERFORMANCE | YES | |
| INITIAL CALIBRATIONS | NO | D, E |
| CONTINUING CALIBRATIONS | NO | D, F |
| LABORATORY BLANKS | NO | B |
| FIELD BLANKS | NO | B |
| DEUTERATED MONITORING COMPOUNDS (DMCs) | NO | G |
| MATRIX SPIKE/DUPLICATES | N/A | |
| INTERNAL STANDARDS | NO | H |
| COMPOUND IDENTIFICATION | YES | |
| COMPOUND QUANTITATION | NO | A, I, J, K |
| SYSTEM PERFORMANCE | YES | |
| FIELD DUPLICATE SAMPLE ANALYSIS | N/A | |

N/A = Not Applicable

III. Validity and Comments

- A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

- B. The following results are qualified as nondetected and estimated due to method blank or trip blank contamination, and are flagged "U,J" in Table 1A.

- Tetrachloroethene in samples Y0E22 and Y0EB7
- Methylene chloride in storage blank VHBLK01
- Chloroform in samples Y0EB6 and Y0E27

Tetrachloroethene (PCE) was found in the method blanks VBLK94, VBLK95, and VBLK99 at concentrations of 0.2 µg/L each. Methylene chloride was found in the method blank VBLK02 at a concentration of 0.2. Chloroform was found in the trip blank Y0EB7 at a concentration of 0.7 µg/L. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Although not detected in the associated method blank, methylene chloride has been commonly found in the field and in many laboratories. The user should note that the methylene chloride results reported for samples Y0E22 (0.2 µg/L) and Y0E27 (0.1 µg/L) may be artifacts.

Although trichloroethene (TCE; 0.2 µg/L) was found in the storage blank VHBLK01, no data are qualified because TCE was not detected in the samples or was detected at concentrations which exceeded 5 times the concentration found in the storage blank.

Although acetone (8 and 10 µg/L) and toluene (0.2 and 0.2 µg/L) were found in the trip blanks, no data are qualified because they were not detected in the samples or were detected at concentrations which exceeded 5 times the concentrations found in the trip blanks.

A laboratory method blank is laboratory reagent water analyzed with all reagents, DMCs, and internal standards and carried through the sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

- C. Detected results and quantitation limits for the following analytes are qualified as estimated due to missed technical holding times, and are flagged "J" in Table 1A.

- All analytes except acetone in sample Y0E22
- TCE in sample Y0E24
- Acetone and PCE in sample Y0E27

These water analyses exceeded the 14-day 40 CFR 136 (Clean Water Act) technical holding times as shown below.

| <u>Sample</u> | <u>Date Collected</u> | <u>Date Analyzed</u> | <u># of Days Exceeded</u> |
|---------------|---------------------------|--------------------------|-------------------------------|
| Y0E22 | 02/25/02 | 03/13/02 | 4 |
| Y0E24DL | 02/25/02 | 03/14/02 | 5 |
| Y0E27DL | 02/26/02 | 03/14/02 | 4 |

Detected results for the samples listed above may be biased low. Where the results are nondetected, false negatives may exist.

- D. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- Acetone, methyl acetate, and 2-butanone in all samples, storage blank, and method blanks

Average RRFs below the 0.05 validation criterion were observed for the analytes listed above in the initial calibration performed on January 31, 2002. RRFs below the 0.05 validation criterion were observed for the analytes listed above in the continuing calibrations performed on March 8, 9, 13, and 15, 2002 (Table 2).

Detected results for the analytes listed above should be considered as the minimum values at which these analytes are present in the samples. Where the results are nondetected, false negatives may exist.

The DMCs 2-butanone-d5 and 2-hexanone-d5 also had RRFs below the 0.05 validation criterion in the initial and continuing calibrations (Table 2). The quantitation of the analytes associated with these DMCs may have been affected by the low RRFs. See Comment F for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The relative response factor evaluates instrument sensitivity and is used in the quantitation of the target analytes.

- E. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent relative standard deviations (RSDs) in the initial calibration, and are flagged "J" in Table 1A.

- Acetone and methylene chloride in all samples, storage blank, and method blanks

Percent RSDs exceeded the $\leq 30.0\%$ validation criterion for the analytes listed above in the initial calibration performed on January 31, 2002 (Table 2).

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

- F. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Isopropylbenzene in samples Y0E25 and Y0E26 and method blank VBLK93
- Methylene chloride in samples Y0E21, Y0E23, Y0E24, Y0E27, Y0EB6, and Y0EB7, storage blank VHBLK01, and method blanks VBLK94, VBLK95, and VBLK02
- Methylene chloride, cyclohexane, methylcyclohexane, PCE, and isopropylbenzene in sample Y0E22 and method blank VBLK99

Percent differences exceeded the $\pm 30.0\%$ validation criterion for the analytes listed above in the continuing calibrations performed on March 8, 9, 13, and 15, 2002 (Table 2).

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

- G. Detected results for the following analytes are qualified as estimated due to DMC recovery outside method QC limits, and are flagged "J" in Table 1A.

{1,1-Dichloroethene-d2}

- trans-1,2-Dichloroethene and cis-1,2-dichloroethene in sample Y0E23

{Chloroform-d}

- 1,1-Dichloroethane (1,1-DCA) in sample Y0E26
- 1,1-DCA and chloroform in sample Y0E23

Specific DMC recoveries which were outside the QC limits for the target analytes listed above are shown below.

| <u>Sample</u> | <u>DMC</u> | <u>%Recovery</u> | <u>QC Limits</u> |
|---------------|-----------------------|------------------|------------------|
| Y0E23 | 1,1-Dichloroethene-d2 | 580 | 65-130 |
| | Chloroform-d | 126 | 80-123 |
| Y0E26 | 1,1-Dichloroethene-d2 | 4400 | 65-130 |
| | Chloroform-d | 600 | 80-123 |

Detected results for affected analytes may be biased high.

Deuterated monitoring compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

- H. Detected result for the following analyte is qualified as estimated due to low internal standard (IS) area, and is flagged "J" in Table 1A.

- PCE in sample Y0E21

Area for the IS 1,4-dichlorobenzene-d4 in sample Y0E21DL (18449) is below the lower QC limit of 19157.

- I. Detected result for the following analyte is qualified as estimated due to high analyte concentration, and are flagged "J" in Table 1A.

- Acetone in sample Y0E26

Concentration of acetone in the undiluted analysis of the sample Y0E26 (340 µg/L) exceeded the 5-250 µg/L calibration range. The sample was re-analyzed at a 200-dilution; acetone was not detected (1000U).

- J. Samples Y0E21 and Y0E23 were analyzed at 10-fold dilutions due to high levels of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factor.

- K. Sample Y0E21 was analyzed at a 200-fold dilution due to the high level of PCE. Result for PCE is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E22 was analyzed at a 200-fold dilution due to the high level of acetone. Result for acetone is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E23 was analyzed at a 200-fold dilution due to high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, TCE, and PCE. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the 10-fold diluted sample.

Sample Y0E24 was analyzed at a 2-fold dilution due to the high level of TCE. Result for TCE is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E26 was analyzed at a 200-fold dilution due to high levels of trichlorofluoromethane, 1,1-dichloroethene (1,1-DCE), 1,1,2-trichloro-1,2,2-trifluoroethane, cis-1,2-DCE, chloroform, TCE, and PCE. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E27 was analyzed at a 10-fold dilution due to high levels of acetone and PCE. Results for acetone and PCE are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

ANALYTICAL RESULTS

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Case No. : 30205

SDG No. : Y0E21

Tier 3 Table 1A

Site : Omega Chem OU-2

Lab : A4 SCIENTIFIC, INC.

Reviewer : Santiago Lee, ESAT/LDC

Date : May 22, 2002

QUALIFIED DATA
Concentration in ug/LAnalysis Type : Low Level Water Samples
For Volatiles

| Station Location : GW102-MW9B-0054 | | | | GW102-MW9B-2010 | | | | GW102-MW6-0042 | | | | GW102-MW3-0042 | | | | GW102-MW5-0049 | | | | GW102-MW10-0057 | | | | GW102-MW10-2009 | | | |
|---------------------------------------|--------|-----|-----|-----------------|-----|-----|--------|----------------|-----|--------|-----|----------------|--------|-----|-----|----------------|-----|-----|--------|-----------------|-----|--------|-----|-----------------|--------|-----|-----|
| Sample ID : Y0EB6 | | | | Y0EB7 TB | | | | Y0E21 | | | | Y0E22 | | | | Y0E23 | | | | Y0E24 | | | | Y0E25 TB | | | |
| Collection Date : 2/26/2002 | | | | 2/26/2002 | | | | 2/25/2002 | | | | 2/25/2002 | | | | 2/25/2002 | | | | 2/25/2002 | | | | 2/25/2002 | | | |
| Dilution Factor : 1.0 | | | | 1.0 | | | | 10.0 | | | | 1.0 | | | | 10.0 | | | | 1.0 | | | | 1.0 | | | |
| Volatile Compound | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com |
| Dichlorodifluoromethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Chloromethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Vinyl Chloride | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Bromomethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Chloroethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Trichlorofluoromethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 470 | | JK | 10 | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,1-Dichloroethene | 1 | | | 0.5U | | | 5U | | J | 0.5U | J | C | 1400 | | JK | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.4L | J | A | 0.5U | | | 3L | J | AJ | 0.5U | J | C | 1200 | | JK | 16 | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Acetone | 59 | J | DE | 10 | J | DE | 50U | J | DEJ | 1700 | | K | 50U | J | DEJ | 5U | J | DE | 8 | J | DE | 8 | J | DE | 8 | J | DE |
| Carbon Disulfide | 0.5U | | | 0.5U | | | 5U | | J | 0.1L | J | AC | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Methyl Acetate | 0.5U | J | D | 0.5U | J | D | 5U | J | DJ | 0.5U | J | CD | 5U | J | DJ | 0.5U | J | D | 0.5U | J | D | 0.5U | J | D | 0.5U | J | D |
| Methylene Chloride | 0.5U | J | F | 0.5U | J | F | 5U | J | FJ | 0.2L | J | ACF | 5U | J | FJ | 0.5U | J | F | 0.5U | J | F | 0.5U | J | F | 0.5U | J | F |
| trans-1,2-Dichloroethene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 2L | J | AGJ | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Methyl tert-Butyl Ether | 2 | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.7 | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,1-Dichloroethane | 0.1L | J | A | 0.5U | | | 5U | | J | 0.5U | J | C | 5L | J | AGJ | 0.2L | J | A | 0.5U | | | 0.5U | | | 0.5U | | |
| cis-1,2-Dichloroethene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 38 | J | GJ | 2 | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 2-Butanone | 5U | J | D | 5U | J | D | 50U | J | DJ | 5U | J | CD | 50U | J | DJ | 5U | J | D | 5U | J | D | 5U | J | D | 5U | J | D |
| Bromochloromethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Chloroform | 0.7U | J | B | 0.7 | | | 5U | | J | 0.5U | J | C | 220 | J | GJ | 0.5U | | | 0.6 | | | 0.5U | | | 0.5U | | |
| 1,1,1-Trichloroethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 7 | J | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Cyclohexane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | CF | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Carbon Tetrachloride | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Benzene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dichloroethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5L | J | AJ | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Trichloroethene | 3 | | | 0.5U | | | 9 | | J | 0.5U | J | C | 1100 | | JK | 23 | | CK | 0.5U | | | 0.5U | | | 0.5U | | |
| Methylcyclohexane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | CF | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dichloropropane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Bromodichloromethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| cis-1,3-Dichloropropene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 4-Methyl-2-pentanone | 5U | | | 5U | | | 50U | | J | 5U | J | C | 50U | | J | 5U | | | 5U | | | 5U | | | 5U | | |
| Toluene | 0.5U | | | 0.2L | J | A | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.2L | J | A | 0.5U | | | 0.5U | | |
| trans-1,3-Dichloropropene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,1,2-Trichloroethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Tetrachloroethene | 24 | | | 0.5U | J | B | 550 | J | HJK | 0.5U | J | BCF | 1300 | | K | 25U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 2-Hexanone | 5U | | | 5U | | | 50U | | J | 5U | J | C | 50U | | J | 5U | | | 5U | | | 5U | | | 5U | | |
| Dibromochloromethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.3L | J | A | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dibromoethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |

ANALYTICAL RESULTS

Case No. : 30205

SDG No. : Y0E21

Tier 3 Table 1A

Site : Omega Chem OU-2

Lab : A4 SCIENTIFIC, INC.

Reviewer : Santiago Lee, ESAT/LDC

Date : May 22, 2002

QUALIFIED DATA

Analysis Type : Low Level Water Samples

Concentration in ug/L

For Volatiles

| Station Location : GW102-MW9B-0054 | | | | GW102-MW9B-2010 | | | | GW102-MW6-0042 | | | | GW102-MW3-0042 | | | | GW102-MW5-0049 | | | | GW102-MW10-0057 | | | | GW102-MW10-2009 | | | |
|------------------------------------|--------|-----|-----|-----------------|-----|-----|--------|----------------|-----|--------|-----|----------------|--------|-----|-----|----------------|-----|-----|--------|-----------------|-----|--------|-----|-----------------|--------|-----|-----|
| Sample ID : Y0EB6 | | | | Y0EB7 TB | | | | Y0E21 | | | | Y0E22 | | | | Y0E23 | | | | Y0E24 | | | | Y0E25 TB | | | |
| Collection Date : 2/26/2002 | | | | 2/26/2002 | | | | 2/25/2002 | | | | 2/25/2002 | | | | 2/25/2002 | | | | 2/25/2002 | | | | 2/25/2002 | | | |
| Dilution Factor : 1.0 | | | | 1.0 | | | | 10.0 | | | | 1.0 | | | | 10.0 | | | | 1.0 | | | | 1.0 | | | |
| Volatile Compound | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com |
| Chlorobenzene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Ethylbenzene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Xylenes (total) | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Styrene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Bromoform | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Isopropylbenzene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | CF | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | J | CF | | |
| 1,1,2,2-Tetrachloroethane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,3-Dichlorobenzene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,4-Dichlorobenzene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dichlorobenzene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dibromo-3-chloropropane | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2,4-Trichlorobenzene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2,3-Trichlorobenzene | 0.5U | | | 0.5U | | | 5U | | J | 0.5U | J | C | 5U | | J | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

SDG No.: Y0E21

Tier 3 Table 1A

Lab : A4 SCIENTIFIC, INC.

QUALIFIED DATA

Analysis Type : Low Level Water Samples

Concentration in ug/L

For Volatiles

| Station Location : | GW102-MW2-0055 | | | GW102-MW9A-0032 | | | Method Blank | | | Method Blank | | | Method Blank | | | Method Blank | | | Method Blank | | |
|---------------------------------------|----------------|-----|-----|-----------------|-----|-----|--------------|-----|-----|--------------|-----|-----|--------------|-----|-----|--------------|-----|-----|--------------|-----|-----|
| Sample ID : | Y0E26 | | | Y0E27 | | | VBLK02 | | | VBLK93 | | | VBLK94 | | | VBLK95 | | | VBLK99 | | |
| Collection Date : | 2/26/2002 | | | 2/26/2002 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | |
| Dilution Factor : | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | |
| Volatile Compound | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com |
| Dichlorodifluoromethane | 3 | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Chloromethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Vinyl Chloride | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Bromomethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Chloroethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Trichlorofluoromethane | 910 | | K | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,1-Dichloroethene | 2700 | | 2 | | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 2400 | | K | 0.4L | J | A | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Acetone | 340 | J | I | 890 | J | CK | 5U | | | 5U | | | 5U | | | 5U | | | 5U | | |
| Carbon Disulfide | 0.5U | | | 0.2L | J | A | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Methyl Acetate | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Methylene Chloride | 0.5U | | | 0.1L | J | AF | 0.2L | J | AF | 0.2L | J | AF | 0.5U | J | F | 0.5U | J | F | 0.5U | J | F |
| trans-1,2-Dichloroethene | 10 | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Methyl tert-Butyl Ether | 0.3L | J | A | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,1-Dichloroethane | 14 | J | G | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| cis-1,2-Dichloroethene | 42L | J | AK | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 2-Butanone | 5U | | | 5U | | | 5U | | | 5U | | | 5U | | | 5U | | | 5U | | |
| Bromochloromethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Chloroform | 1200 | | K | 1U | J | B | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,1,1-Trichloroethane | 20 | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Cyclohexane | 0.2L | J | A | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | J | F |
| Carbon Tetrachloride | 0.3L | J | A | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Benzene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dichloroethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Trichloroethene | 1000 | | K | 9 | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Methylcyclohexane | 0.1L | J | A | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | J | F |
| 1,2-Dichloropropane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Bromodichloromethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| cis-1,3-Dichloropropene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 4-Methyl-2-pentanone | 5U | | | 5U | | | 5U | | | 5U | | | 5U | | | 5U | | | 5U | | |
| Toluene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| trans-1,3-Dichloropropene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,1,2-Trichloroethane | 4 | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Tetrachloroethene | 4600 | | K | 70 | J | CK | 0.5U | | | 0.5U | | | 0.2L | J | A | 0.2L | J | A | 0.2L | J | A |
| 2-Hexanone | 5U | | | 5U | | | 5U | | | 5U | | | 5U | | | 5U | | | 5U | | |
| Dibromochloromethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dibromoethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |

ANALYTICAL RESULTS

Case No. : 30205

SDG No. : Y0E21

Tier 3 Table 1A

Site : Omega Chem OU-2

Lab : A4 SCIENTIFIC, INC.

Reviewer : Santiago Lee, ESAT/LDC

Date : May 22, 2002

QUALIFIED DATA

Analysis Type : Low Level Water-Samples

Concentration in ug/L

For Volatiles

| Station Location : GW102-MW2-0055 | | | | GW102-MW9A-0032 | | | Method Blank VBLK02 | | | Method Blank VBLK93 | | | Method Blank VBLK94 | | | Method Blank VBLK95 | | | Method Blank VBLK99 | | |
|-----------------------------------|--------|-----|-----|-----------------|-----|-----|---------------------|-----|-----|---------------------|-----|-----|---------------------|-----|-----|---------------------|-----|-----|---------------------|-----|-----|
| Sample ID : Y0E26 | | | | Y0E27 | | | VBLK02 | | | VBLK93 | | | VBLK94 | | | VBLK95 | | | VBLK99 | | |
| Collection Date : 2/26/2002 | | | | 2/26/2002 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | |
| Dilution Factor : 1.0 | | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | | 1.0 | | |
| Volatile Compound | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com |
| Chlorobenzene | 0.4L | J | A | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Ethylbenzene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Xylenes (total) | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Styrene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Bromoform | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| Isopropylbenzene | 0.5U | J | F | 0.5U | | | 0.5U | | | 0.5U | J | F | 0.5U | | | 0.5U | | | 0.5U | J | F |
| 1,1,2,2-Tetrachloroethane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,3-Dichlorobenzene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,4-Dichlorobenzene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dichlorobenzene | 0.3L | J | A | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2-Dibromo-3-chloropropane | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2,4-Trichlorobenzene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |
| 1,2,3-Trichlorobenzene | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | | 0.5U | | |

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

SDG No. : Y0E21

Tier 3 Table 1A

Lab : A4 SCIENTIFIC, INC.

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Low Level Water Samples
For Volatiles

[illegible]

ANALYTICAL RESULTS

Case No. : 30205

SDG No. : Y0E21

Tier 3 Table 1A

Site : Omega Chem OU-2

Lab : A4 SCIENTIFIC, INC.

Reviewer : Santiago Lee, ESAT/LDC

Date : May 22, 2002

QUALIFIED DATA

Analysis Type : Low Level Water Samples

Concentration in ug/L

For Volatiles

| Station Location : | Storage Blank | | | CRQL | | | | | | | | | | | | | | | | | |
|-----------------------------|---------------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| Sample ID : | VHBLK01 | | | | | | | | | | | | | | | | | | | | |
| Collection Date : | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor : | 1.0 | | | | | | | | | | | | | | | | | | | | |
| Volatile Compound | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com | Result | Val | Com |
| Chlorobenzene | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| Ethylbenzene | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| Xylenes (total) | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| Styrene | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| Bromoform | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| Isopropylbenzene | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.5U | | | 0.5 | | | | | | | | | | | | | | | | | |

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

TABLE 1B
DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994.

- | | |
|----|---|
| U | The analyte was analyzed for but was not detected above the reported sample quantitation limit. |
| L | Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| NJ | The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. |
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. |
| R | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified. |

Table 2
Calibration Summary

Case No.: 30205 SDG No.: Y0E21
Site: Omega Chem OU-2
Laboratory: A4 Scientific
Reviewer: Santiago Lee, ESAT/LDC
Date: May 23, 2002

RELATIVE RESPONSE FACTORS

| | <u>RRF</u> | RRF | RRF | RRF | RRF | RRF |
|----------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Analysis Date: | 01/31/02 | 03/08/02 | 03/08/02 | 03/09/02 | 03/13/02 | 03/15/02 |
| Analysis Time: | 0928-1147 | 1145 | 2227 | 1501 | 1954 | 0926 |
| GC/MS I.D.: | C-5973 | C-5973 | C-5973 | C-5973 | C-5973 | C-5973 |
| <u>Analyte</u> | <u>Init.</u> | <u>Cont.</u> | <u>Cont.</u> | <u>Cont.</u> | <u>Cont.</u> | <u>Cont.</u> |
| Acetone | 0.022 | 0.028 | 0.021 | 0.024 | 0.020 | 0.021 |
| Methyl Acetate | 0.044 | 0.049 | 0.037 | 0.039 | 0.040 | 0.034 |
| 2-Butanone | 0.024 | 0.028 | 0.025 | 0.026 | 0.022 | 0.023 |
| 2-Butanone-d5 | 0.027 | 0.026 | 0.023 | 0.021 | 0.030 | 0.028 |
| 2-Hexanone-d5 | 0.027 | 0.025 | 0.022 | 0.019 | 0.028 | 0.028 |

PERCENT RELATIVE STANDARD DEVIATIONS

| | %RSD |
|--------------------|--------------|
| Analysis Date: | 01/31/02 |
| Analysis Time: | 0928-1147 |
| GC/MS I.D.: | C-5973 |
| <u>Analyte</u> | <u>Init.</u> |
| Acetone | 32.6 |
| Methylene Chloride | 41.0 |
| 2-Hexanone-d5 | 33.1 |

PERCENT DIFFERENCES

| | %D | %D | %D | %D | %D |
|--------------------|--------------|--------------|--------------|--------------|--------------|
| Analysis Date: | 03/08/02 | 03/08/02 | 03/09/02 | 03/13/02 | 03/15/02 |
| Analysis Time: | 1145 | 2227 | 1501 | 1954 | 0926 |
| GC/MS I.D.: | C-5973 | C-5973 | C-5973 | C-5973 | C-5973 |
| <u>Analyte</u> | <u>Cont.</u> | <u>Cont.</u> | <u>Cont.</u> | <u>Cont.</u> | <u>Cont.</u> |
| Isopropylbenzene | +32.4 | ---- | ---- | +37.4 | ---- |
| Methylene Chloride | ---- | -32.3 | -31.1 | +69.9 | -36.9 |
| Cyclohexane | ---- | ---- | ---- | +38.2 | ---- |
| Methylcyclohexane | ---- | ---- | ---- | +36.0 | ---- |
| Tetrachloroethene | ---- | ---- | ---- | +32.1 | ---- |

ASSOCIATED SAMPLES AND METHOD BLANKS

Init. 01/31/02: All samples, storage blank, and method blanks.

Cont. 03/08/02: Y0E25, Y0E26, VBLK93

Cont. 03/08/02: Y0E26DL, Y0E23DL, Y0E22DL, Y0E21DL, VBLK94

Cont. 03/09/02: Y0E21, Y0E23, Y0E24, Y0E27, Y0EB6, Y0EB7, VBLK95

Cont. 03/13/02: Y0E22, Y0E24DL, Y0E27DL, VBLK99

Cont. 03/15/02: VHBLK01, VBLK02

1LCF
 LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
 DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS EPA SAMPLE NO.

Y0E23

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038
 Lab Code: A4 Case No.: 30205 Client No.: SDG No.: Y0E21
 Lab Sample ID: 1388.004 Date Received: 02/27/02
 Lab File ID: C3750 Date Analyzed: 03/09/02
 Purge Volume: 25 (ML) Dilution Factor: 10.0
 GC Column: RTX-624 ID: 0.32 (MM) Length: 60 (M)
 Number TICs found: 3

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (UG/L) | Q |
|----|-------------|---|------|----------------------|----|
| 01 | | UNKNOWN <i>1,1,2,2-tetrachloroethane</i> | 3.59 | 7.3 | J |
| 02 | | UNKNOWN <i>1,2-dichloroethane</i> | 3.67 | 13 | J |
| 03 | 000076-12-0 | Ethane, 1,1,2,2-tetrachloro- | 7.68 | 5.8 | JN |
| 04 | | <i>1,2-dichloro-</i> | | | |
| 05 | | | | | |
| 06 | | <i>SL, 4/23/02.</i> | | | |
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073

1LCF
 LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
 DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS EPA SAMPLE NO.

Y0E26

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038
 Lab Code: A4 Case No.: 30205 Client No.: SDG No.: Y0E21
 Lab Sample ID: 1388.007 Date Received: 02/27/02
 Lab File ID: C3711 Date Analyzed: 03/08/02
 Purge Volume: 25 (ML) Dilution Factor: 1.0
 GC Column: RTX-624 ID: 0.32 (MM) Length: 60 (M)
 Number TICs found: 9

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (UG/L) | Q |
|----|-------------|--|-------|----------------------|----|
| 01 | | UNKNOWN Dichlorotetrafluoroethane | 3.59 | 18 | J |
| 02 | | UNKNOWN | 3.66 | 25 | J |
| 03 | | UNKNOWN | 6.95 | 40 | J |
| 04 | 000822-50-4 | Cyclopentane, 1,2-dimethyl-, | 7.16 | 0.58 | JN |
| 05 | | UNKNOWN | 8.78 | 0.60 | J |
| 06 | | UNKNOWN | 11.11 | 1.2 | J |
| 07 | | UNKNOWN | 12.19 | 0.92 | J |
| 08 | | UNKNOWN | 13.14 | 0.99 | J |
| 09 | | UNKNOWN | 14.37 | 0.73 | J |
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| 11 | | SL, 4/23/02 | | | |
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1LCF
LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS EPA SAMPLE NO.

Y0EB6

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038
Lab Code: A4 Case No.: 30205 Client No.: SDG No.: Y0E21
Lab Sample ID: 1388.009 Date Received: 02/27/02
Lab File ID: C3741 Date Analyzed: 03/09/02
Purge Volume: 25 (ML) Dilution Factor: 1.0
GC Column: RTX-624 ID: 0.32 (MM) Length: 60 (M)
Number TICs found: 1

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (UG/L) | Q |
|----|------------|---------------|------|----------------------|---|
| 01 | | UNKNOWN | 4.06 | 0.51 | J |
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0205

1LCF
LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS EPA SAMPLE NO.

Y0EB7

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038
Lab Code: A4 Case No.: 30205 Client No.: SDG No.: Y0E21
Lab Sample ID: 1388.010 Date Received: 02/27/02
Lab File ID: C3740 Date Analyzed: 03/09/02
Purge Volume: 25 (ML) Dilution Factor: 1.0
GC Column: RTX-624 ID: 0.32 (MM) Length: 60 (M)
Number TICs found: 1

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (UG/L) | Q |
|----|------------|---------------|------|----------------------|---|
| 01 | | UNKNOWN | 5.75 | 0.54 | J |
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